REMARKS

Claims 1, 9, 15, 21, 29, 36, 37, and 45 have been amended. Claims 1-52 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

Section 103(a) Rejections:

The Office Action rejected claims 1-6, 9-12, 15-18, 21-26, 29-33, 36-42 and 45-50 under 35 U.S.C. § 103(a) as being unpatentable over Doyle (U.S. Patent 6,009,455) in view of Kortuem, et al. ("When Peer-to-Peer Comes Face-to-Face: Collaborative Peer-to-Peer Computing in Mobile Ad hoc Networks published in First International Conference on Peer-to-Peer Computing Proceedings, August 2001, pages 75-91") (hereinafter "Kortuem"). Applicant respectfully traverses this rejection for at least the following reason.

Doyle's system would be recognized in the art as a **conventional** *grid computing system* as disclosed in the Background section of the instant application. As further explained below, Doyle (whether considered alone or in combination with Kortuem) simply describes the same sort of **conventional** grid computing system that is described in the Background section of the present application. The Kortuem reference pertains to decentralized ad hoc mobile peer networks. Doyle and Kortuem, alone or in combination, do not teach or suggest Applicant's claimed invention, as further shown below.

In regard to claim 1, contrary to the Examiner's assertion, the cited references, alone or in combination, fail to disclose a master node configured to manage a grid comprising one or more compute nodes; a node configured to send the master node information about compute node configuration of the node in accordance with one or more peer-to-peer platform protocols; wherein the master

node is configured to: determine from the information about compute node configuration that the compute node configuration of the node needs to be updated.

The Examiner cites Doyle, col. 3 line 64 – col. 4 line 10 as teaching *a node configured to send the master node information about compute node configuration of the node.* Col. 3 line 58 – col. 4 line 20 teaches that Doyle's client control program executes an availability algorithm. The availability algorithm may, in addition to determining availability of the respective client computer, evaluate the existence and configuration of various predetermined resources on the client computer. An available client sends an availability signal to the master control program. The availability signal indicates the availability of the client as well as any resource information gathered by the availability algorithm.

The Examiner then asserts that Doyle teaches *the master node is configured to determine from the information about compute node configuration that the compute node configuration of the node needs to be updated,* asserting "the master control program determines if an available client is a candidate to participate in a distributed computation," and citing Doyle, col. 4 lines 20-23. Col. 4, lines 20-27 of Doyle read:

> A qualification algorithm 45 in the master control program determines if an available client is a candidate to participate in a distributed computation. The bases for such determination include the existence on the client of resources required by the particular job request. If the master control program has no work for the available client, an optional idle response (not shown) may be sent.

This citation from Doyle only teaches that the qualification algorithm in the master control program determines if an available client is a candidate to participate in a particular distributed computation. The bases for such determination include the existence on the client of resources required by the particular job request. Applicant assumes that the resource information gathered by the availability algorithm and indicated by Doyle's "availability signal" may be used to determine the existence on the client of resources required by the particular job request. In contrast to the teachings of Doyle, claim 1 recites that the master node is configured to *determine from the*

information about compute node configuration that the compute node configuration of the node needs to be updated. Contrary to the Examiner's assertion, Doyle does not teach that the resource information is used to determine that "the compute node configuration of the node needs to be updated." Doyle instead clearly and only teaches that the resource information is used to determine the existence on the client of resources required by a particular job request.

In further regard to claim 1, contrary to the Examiner's assertion, the cited references, alone or in combination, fail to disclose a master node configured to send update information for the compute node configuration to the node in accordance with the one or more peer-to-peer platform protocols in response to said determination that the compute node configuration of the node needs to be updated.

The Examiner asserts that Doyle teaches *the master node is configured to send update information for the compute node configuration to the node*, asserting "job computation module 14 in figure 2c, determine which mode the program should operate based on the job request message from job request means, 1 in figure 2c, and sends it to the available clients", citing col. 5, line 64-col. 6 line 16. Applicant notes that it is unclear as to what "it" is that the Examiner asserts is being sent to the available clients. If the Examiner is referring to the "mode", neither the Figure nor the cited portion of the specification teach that the "mode" is sent to the available clients, nor does Doyle elsewhere teach that the "mode" is sent to the available clients. Col. 5, line 64-col. 6 line 16 does not even mention "mode."

> Furthermore, Doyle, at col. 4, lines 28-33, states (emphasis added):
>
> As shown in FIG. 2c, asynchronously with the client's availability signals, the job request means 1 provides a job request signal 40. The job request signal includes a job request message 44 as well as a number of files, or references to files already on the master computer, that are required to perform a job.

The citation from col. 5, line 64-col. 6 line 16 is directed at the job control algorithm of the master control program handling the job request signals. As indicated in the citation

from col. 4, lines 28-33, the job request signals are provided by job request means (which are not the same as Doyle's clients) and are asynchronous with the client availability signals. The job control algorithm of the master control program handling the job request signals, as described by Doyle, is clearly separate and distinct from the master control program's qualification algorithm's handling of the availability signals from Doyle's clients. Thus, the Examiner is improperly attempting to combine separate and distinct teachings of Doyle in an effort to support the assertion that Doyle teaches subject matter as recited in Applicant's claim 1.

In addition, in Doyle, the job control algorithm of the master control program handling the job request signals involves the job control program sending "segments" into which a particular "problem set" can be divided (see, e.g., col. 5, lines 15-17). These segments of a "problem set" are what Doyle describes as being distributed among "available clients" (see, e.g., col. 6, lines 5-7), and not anything like "update information for the compute node configuration" of the clients. Moreover, Doyle indicates that the segments are sent to "available clients" (see, e.g., col. 6, lines 5-7), which would indicate, according to Doyle's teachings on determining available clients, teachings on which the Examiner relies (see, e.g., col. 4, lines 20-27), that the clients to which the "segments" are sent must have been already determined to be properly configured and available to process the segments of a particular "problem set" they receive; else, the clients **would not be "available clients."** Thus, the teachings of Doyle actually preclude the segments being sent to the "available clients" in response to determining that the compute node configuration of the available clients needs updating, as the clients would not be "available clients" if Doyle's system had not already determined that the clients were properly configured and available to process segments of a particular problem set.

Moreover, in contrast to Doyle's teachings, amended claim 1 recites that the master node is configured to determine from the information about compute node configuration that the compute node configuration of the node needs to be updated, and to send update information for the compute node configuration to the node in response to said determination that the compute node configuration of the node needs to be updated.

Doyle does not teach the master node sending update information for the compute node configuration to the node in response to said determination that the compute node configuration of the node needs to be updated, as is recited in Applicant's claim 1. As noted above, Doyle does not even teach the master node determining that the compute node configuration of the node needs to be updated.

The Examiner relies on the Kortuem reference to teach *in accordance with one or more peer-to-peer platform protocols*. **However, neither Doyle's nor Kortuem's teachings (whether considered alone or in combination) teach the subject matter as recited in Applicant's claim 1.** Combining Kortuem with Doyle would not produce anything like what is recited in claim 1 when viewed as a whole; such a combination would only produce Doyle's system that utilizes Kortuem's "Proem".

Moreover, the Examiner has not provided a proper *prima facie* reason to combine the references. The Examiner asserts "It would have been obvious…to combine Doyle to include the peer-to-peer protocol as taught by Kortuem in order to discover all neighboring nodes, which have not been connected as a fixed network or configured, with the master node to participate in distributed or grid computing system." First, the reason given by the Examiner is not at all relevant to the subject matter of Applicant's claim 1, which does not recite any limitation or limitations similar to "discover all neighboring nodes". Moreover, the Examiner's reason is not supported by any evidence of record, and is merely conclusory. In addition, such a combination for the reasons given by the Examiner would make no sense because the nodes in Doyle are already configured as compute nodes. There would be no reason for a node in Doyle to "discover all neighboring nodes, which have not been connected as a fixed network or configured, with the master node to participate in distributed or grid computing system". The nodes in Doyle's grid are already configured as compute nodes, and are already aware of the master node.

Also, the teachings of Kortuem pertain to the formation of ad hoc decentralized peer networks. The term "ad hoc" refers to something done for a particular purpose only

when the situation makes it necessary or desirable, rather than being arranged in advance or being part of a general plan. The grid in Doyle is not an ad hoc system. Thus, the teachings of Kortuem would not pertain to Doyle's system. The concept of ad hoc discovery makes no sense in the context of Doyle.

Thus, for at least the reasons presented above, the rejection of claim 1 is not supported by the cited art and removal thereof is respectfully requested.

In regard to claim 21, the Examiner has not provided a proper prima facie rejection of the claim. The Examiner rejected claim 21 with claim 1. However, claims 1 and 21 are of different scope. For example, claim 1 recites a master node configured to manage a grid comprising one or more compute nodes. Claim 21 recites no such limitation. As another example, claim 21 recites a system configured to participate as a compute node in a grid configured to, if the compute node configuration of the system is not up-to-date: obtain update information for the compute node configuration from the node in accordance with the one or more peer-to-peer platform protocols; and update the compute node configuration of the system in accordance with the update information. Claim 1 does not recite this subject matter as recited in claim 21.

However, in further regard to claim 21, the cited references, alone or in combination, fail to disclose a system configured to participate as a compute node in a grid comprising one or more compute nodes, comprising: a processor; and a memory comprising program instructions, wherein the program instructions are executable by the processor to: communicate with a node on a network in accordance with one or more peer-to-peer platform protocols to determine that compute node configuration of the system is not up-to-date.

In the rejection of claim 1, which includes similar yet different limitations to the above limitations, the Examiner cites Doyle, col. 3 line 64 – col. 4 line 10 as teaching *a node configured to send the master node information about compute node configuration of the node.* Col. 3 line 58 – col. 4 line 20 teaches that Doyle's client control program

executes an availability algorithm. The availability algorithm may, in addition to determining availability of the respective client computer, evaluate the existence and configuration of various predetermined resources on the client computer. An available client sends an availability signal to the master control program. The availability signal indicates the availability of the client as well as any resource information gathered by the availability algorithm.

In the rejection of claim 1, the Examiner then asserts that Doyle teaches *the master node is configured to determine from the information about compute node configuration that the compute node configuration of the node needs to be updated,* asserting "the master control program determines if an available client is a candidate to participate in a distributed computation," and citing Doyle, col. 4 lines 20-23. Col. 4, lines 20-27 of Doyle read:

> A qualification algorithm 45 in the master control program determines if an available client is a candidate to participate in a distributed computation. The bases for such determination include the existence on the client of resources required by the particular job request. If the master control program has no work for the available client, an optional idle response (not shown) may be sent.

This citation from Doyle only teaches that the qualification algorithm in the master control program determines if an available client is a candidate to participate in a particular distributed computation. The bases for such determination include the existence on the client of resources required by the particular job request. Applicant assumes that the resource information gathered by the availability algorithm and indicated by Doyle's "availability signal" may be used to determine the existence on the client of resources required by the particular job request. In contrast to the teachings of Doyle, claim 21 recites that the system is configured *to communicate with a node on a network to determine that compute node configuration of the system is not up-to-date.* In contrast, Doyle clearly and only teaches that resource information is used to determine the existence on the client of resources required by a particular job request.

In further regard to claim 21, the cited references, alone or in combination, fail to disclose wherein the program instructions are executable by the processor to, in response to said determination that the compute node configuration of the system is not up-to-date: obtain update information for the compute node configuration from the node in accordance with the one or more peer-to-peer platform protocols; and update the compute node configuration of the system in accordance with the update information.

In the rejection of claim 1, which includes similar yet different limitations to the above limitations, the Examiner asserts that Doyle teaches *the master node is configured to send update information for the compute node configuration to the node*, asserting "job computation module 14 in figure 2c, determine which mode the program should operate based on the job request message from job request means, 1 in figure 2c, and sends it to the available clients", citing col. 5, line 64-col. 6 line 16. Applicant notes that it is unclear as to what "it" is that the Examiner asserts is being sent to the available clients. If the Examiner is referring to the "mode", neither the Figure nor the cited portion of the specification teach that the "mode" is sent to the available clients, nor does Doyle elsewhere teach that the "mode" is sent to the available clients. Col. 5, line 64-col. 6 line 16 does not even mention "mode."

Furthermore, Doyle, at col. 4, lines 28-33, states (emphasis added):

> As shown in FIG. 2c, asynchronously with the client's availability signals, the job request means 1 provides a job request signal 40. The job request signal includes a job request message 44 as well as a number of files, or references to files already on the master computer, that are required to perform a job.

The citation from col. 5, line 64-col. 6 line 16 is directed at the job control algorithm of the master control program handling the job request signals. As indicated in the citation from col. 4, lines 28-33, the job request signals are provided by job request means (which are not the same as Doyle's clients) and are asynchronous with the client availability signals. The job control algorithm of the master control program handling the job request signals, as described by Doyle, is clearly separate and distinct from the master control

program's qualification algorithm's handling of the availability signals from Doyle's clients. Thus, the Examiner is improperly attempting to combine separate and distinct teachings of Doyle in an effort to support the assertion that Doyle teaches subject matter as recited in Applicant's claims.

In addition, in Doyle, the job control algorithm of the master control program handling the job request signals involves the job control program sending "segments" into which a particular "problem set" can be divided (see, e.g., col. 5, lines 15-17). These segments of a "problem set" are what Doyle describes as being distributed among "available clients" (see, e.g., col. 6, lines 5-7), and not anything like "update information for the compute node configuration" of the clients. Moreover, Doyle indicates that the segments are sent to "available clients" (see, e.g., col. 6, lines 5-7), which would indicate, according to Doyle's teachings on determining available clients, teachings on which the Examiner relies (see, e.g., col. 4, lines 20-27), that the clients to which the "segments" are sent must have been already determined to be properly configured and available to process the segments of a particular "problem set" they receive; else, the clients **would not be "available clients."** Thus, the teachings of Doyle actually preclude the segments being sent to the "available clients" in response to determining that the compute node configuration of the available clients needs updating, as the clients would not be "available clients" if Doyle's system had not already determined that the clients were properly configured and available to process segments of a particular problem set.

Moreover, in contrast to Doyle's teachings, amended claim 21 recites *in response to said determination that the compute node configuration of the system is not up-to-date: obtain update information for the compute node configuration from the node in accordance with the one or more peer-to-peer platform protocols; and update the compute node configuration of the system in accordance with the update information.* Doyle does not teach sending update information for the compute node configuration to the node in response to said determination that the compute node configuration of the node is not up-to-date, as is recited in Applicant's claim 21. As noted above, Doyle does

not even teach determining that the compute node configuration of the node needs to be updated.

The Examiner relies on the Kortuem reference to teach *in accordance with one or more peer-to-peer platform protocols*. Applicant's arguments directed at the Kortuem reference and the proposed combination of Kortuem and Doyle apply equally to claim 21.

Thus, for at least the reasons presented above, the rejection of claim 21 is not supported by the cited art and removal thereof is respectfully requested.

In regard to claim 29, the Examiner has not provided a proper prima facie rejection of the claim. The Examiner rejected claim 29 with claim 1. However, claims 1 and 29 are of different scope. For example, claim 1 recites a master node configured to manage a grid comprising one or more compute nodes. Claim 29 recites no such limitation. As another example, claim 29 recites a system comprising a processor and a memory comprising program instructions, wherein the program instructions are executable by the processor to receive information about compute node configuration of a node configured to participate as a compute node in a grid in accordance with one or more peer-to-peer platform protocols. Claim 1 does not recite this specific limitation.

However, in further regard to claim 29, the cited references, alone or in combination, fail to disclose a system comprising a processor and a memory comprising program instructions, wherein the program instructions are executable by the processor to receive information about compute node configuration of a node configured to participate as a compute node in a grid and determine from the information about compute node configuration that the compute node configuration of the node needs to be updated.

In the rejection of claim 1, which includes similar yet different limitations to the above limitations, the Examiner cites Doyle, col. 3 line 64 – col. 4 line 10 as teaching *a node configured to send the master node information about compute node configuration*

of the node. Col. 3 line 58 – col. 4 line 20 teaches that Doyle's client control program executes an availability algorithm. The availability algorithm may, in addition to determining availability of the respective client computer, evaluate the existence and configuration of various predetermined resources on the client computer. An available client sends an availability signal to the master control program. The availability signal indicates the availability of the client as well as any resource information gathered by the availability algorithm.

The Examiner then asserts that Doyle teaches *the master node is configured to determine from the information about compute node configuration that the compute node configuration of the node needs to be updated,* asserting "the master control program determines if an available client is a candidate to participate in a distributed computation," and citing Doyle, col. 4 lines 20-23. Col. 4, lines 20-27 of Doyle read:

> A qualification algorithm 45 in the master control program determines if an available client is a candidate to participate in a distributed computation. The bases for such determination include the existence on the client of resources required by the particular job request. If the master control program has no work for the available client, an optional idle response (not shown) may be sent.

This citation from Doyle only teaches that the qualification algorithm in the master control program determines if an available client is a candidate to participate in a particular distributed computation. The bases for such determination include the existence on the client of resources required by the particular job request. Applicant assumes that the resource information gathered by the availability algorithm and indicated by Doyle's "availability signal" may be used to determine the existence on the client of resources required by the particular job request. In contrast to the teachings of Doyle, claim 29 recites the system determining from the information about compute node configuration that the compute node configuration of the node needs to be updated. Contrary to the Examiner's assertion, Doyle does not teach that the resource information is used to determine that "the compute node configuration of the node needs to be updated." Doyle instead clearly and only teaches that the resource information is used to determine the existence on the client of resources required by a particular job request.

In further regard to claim 29, the cited references, alone or in combination, fail to disclose a system comprising a processor and a memory comprising program instructions, wherein the program instructions are executable by the processor to send update information for the compute node configuration to the node in response to said determination that the compute node configuration of the node needs to be updated.

In the rejection of claim 1, which includes similar yet different limitations to the above limitations, the Examiner asserts that Doyle teaches *the master node is configured to send update information for the compute node configuration to the node*, asserting "job computation module 14 in figure 2c, determine which mode the program should operate based on the job request message from job request means, 1 in figure 2c, and sends it to the available clients", citing col. 5, line 64-col. 6 line 16. Applicant notes that it is unclear as to what "it" is that the Examiner asserts is being sent to the available clients. If the Examiner is referring to the "mode", neither the Figure nor the cited portion of the specification teach that the "mode" is sent to the available clients, nor does Doyle elsewhere teach that the "mode" is sent to the available clients. Col. 5, line 64-col. 6 line 16 does not even mention "mode."

Furthermore, Doyle, at col. 4, lines 28-33, states (emphasis added):

> As shown in FIG. 2c, asynchronously with the client's availability signals, the job request means 1 provides a job request signal 40. The job request signal includes a job request message 44 as well as a number of files, or references to files already on the master computer, that are required to perform a job.

The citation from col. 5, line 64-col. 6 line 16 is directed at the job control algorithm of the master control program handling the job request signals. As indicated in the citation from col. 4, lines 28-33, the job request signals are provided by job request means (which are not the same as Doyle's clients) and are asynchronous with the client availability signals. The job control algorithm of the master control program handling the job request signals, as described by Doyle, is clearly separate and distinct from the master control

program's qualification algorithm's handling of the availability signals from Doyle's clients. Thus, the Examiner is improperly attempting to combine separate and distinct teachings of Doyle in an effort to support the assertion that Doyle teaches subject matter as recited in Applicant's claims.

In addition, in Doyle, the job control algorithm of the master control program handling the job request signals involves the job control program sending "segments" into which a particular "problem set" can be divided (see, e.g., col. 5, lines 15-17). These segments of a "problem set" are what Doyle describes as being distributed among "available clients" (see, e.g., col. 6, lines 5-7), and not anything like "update information for the compute node configuration" of the clients. Moreover, Doyle indicates that the segments are sent to "available clients" (see, e.g., col. 6, lines 5-7), which would indicate, according to Doyle's teachings on determining available clients, teachings on which the Examiner relies (see, e.g., col. 4, lines 20-27), that the clients to which the "segments" are sent must have been already determined to be properly configured and available to process the segments of a particular "problem set" they receive; else, the clients **would not be "available clients."** Thus, the teachings of Doyle actually preclude the segments being sent to the "available clients" in response to determining that the compute node configuration of the available clients needs updating, as the clients would not be "available clients" if Doyle's system had not already determined that the clients were properly configured and available to process segments of a particular problem set.

Moreover, in contrast to Doyle's teachings, amended claim 29 recites that the system is configured to determine from the information about compute node configuration that the compute node configuration of the node needs to be updated, and to send update information for the compute node configuration to the node in response to said determination that the compute node configuration of the node needs to be updated. Doyle does not teach the master node sending update information for the compute node configuration to the node in response to said determination that the compute node configuration of the node needs to be updated, as is recited in Applicant's claim 29. As

noted above, Doyle does not even teach the master node determining that the compute node configuration of the node needs to be updated.

The Examiner relies on the Kortuem reference to teach *in accordance with one or more peer-to-peer platform protocols*. Applicant's arguments directed at the Kortuem reference and the proposed combination of Kortuem and Doyle apply equally to claim 29.

Thus, for at least the reasons presented above, the rejection of claim 29 is not supported by the cited art and removal thereof is respectfully requested.

In regard to claim 9, claim 9 is a method claim that recites similar subject matter to that recited in claim 1. Therefore, Applicant traverses the rejection of claim 9 for at least the reasons given above in regard to claim 1.

In regard to claim 15, claim 15 is a computer-accessible storage medium claim that recites similar subject matter to that recited in claim 1. Therefore, Applicant traverses the rejection of claim 15 for at least the reasons given above in regard to claim 1.

In regard to claim 36, claim 36 is a means plus function claim that recites similar subject matter to that recited in claim 21. Therefore, Applicant traverses the rejection of claim 36 for at least the reasons given above in regard to claim 21.

In regard to claim 37, claim 37 is a method claim that recites similar subject matter to that recited in claim 21. Therefore, Applicant traverses the rejection of claim 37 for at least the reasons given above in regard to claim 21.

In regard to claim 45, claim 45 is a computer-accessible storage medium claim that recites similar subject matter to that recited in claim 21. Therefore, Applicant traverses the rejection of claim 45 for at least the reasons given above in regard to claim 21.

The Office Action rejected claims 7, 13, 19, 27, 34, 43 and 51 under 35 U.S.C. § 103(a) as being unpatentable over Doyle in view of Kortuem, and further in view of Sum Cluster Grid Architecture (hereinafter "Sun Cluster"). However, since the rejections have been shown to be unsupported for the independent claims from which these claims depend, further discussion of this rejection is not necessary at this time.

The Office Action rejected claims 8, 14, 20, 28, 35, 44 and 52 under 35 U.S.C. § 103(a) as being unpatentable over Doyle in view of Kortuem, and further in view of JXTA Chapter 1 (hereinafter "JXTA"). However, since the rejections have been shown to be unsupported for the independent claims from which these claims depend, further discussion of this rejection is not necessary at this time.

Applicant also asserts that the rejection of numerous ones of the dependent claims is further unsupported by the cited art. However, since the rejection has been shown to be unsupported for the independent claims, a further discussion of the dependent claims is not necessary at this time.

CONCLUSION

Applicant submits the application is in condition for allowance, and notice to that effect is respectfully requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-75600/RCK.

Respectfully submitted,

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Date: February 9, 2009